

REMARKS/ARGUMENTS

Claims 1-11 and 20-21 are cancelled.

Because the claims have not been amended, no new matter has been added.

The obviousness rejection of Claims 12-19 as being unpatentable in over Upholt in view of Matsumoto is respectfully traversed, because the references, either alone or in combination, do not describe or suggest isolated polynucleotide sequences of present Claims 12 and 13, and the claims depending therefrom.

Upholt appears to describe a genome encoding chicken type II procollagen that consists of 46 exons and 45 introns (see, for example, Figure 2 and Table 1 of Upholt), but does not provide the full length cDNA and/or genomic DNA of chicken type II collagen as disclosed in the present originally filed specification.

Further, Upholt describes, at page 2327, “Although we have no data regarding the NH₂-terminal regions of the chicken $\alpha 2$ (II) procollagen gene, available data for the chicken $\alpha 2$ (I), the human α (I), the human $\alpha 1$ (II), the rat $\alpha 1$ (II) gene and chicken $\alpha 1$ (III) genes suggest this region has diverged considerably” (underlining emphasis added). Accordingly, based upon the admissions of Upholt, Applicants submit that a person of ordinary skill in the art could not obtain the full-length genomic cDNA sequence from the disclosure of Upholt, and could not therefore clone the full-length sequence of the CCOL2A1 gene.

Applicants therefore submit that Upholt fails to describe or suggest both the presently claimed full-length cDNA and genomic sequences.

Moreover, Applicants submit that obtaining the presently claimed full length cDNA and genomic DNA via conventional techniques is difficult and non-obvious because of the complex structure *per se* of these isolated polynucleotides, including a high GC content, repetition sequences, and non-specific binding sites for primers.

Accordingly, Upholt does not describe or suggest the isolated polynucleotide sequences of present Claims 12 and 13 and the claims depending therefrom.

The teachings of Matsumoto do not remedy the deficiencies of Upholt. Applicants note that Matsumoto does not appear to describe or suggest any experimental data about a chicken type II collagen made by recombinant genetic techniques, and therefore cannot remedy the deficiencies of Upholt.

Thus, Matsumoto and Upholt, either alone or in combination, do not describe or suggest the isolated polynucleotide sequences of present Claims 12 and 13, and the claims depending therefrom.

Withdrawal of the obviousness rejection is respectfully requested.

The obviousness rejection of Claim 21 as being unpatentable in over Upholt in view of Xi is obviated by cancellation of Claim 21.

Applicants submit the present application is now in condition for allowance. Early notification to this effect is earnestly solicited.

Respectfully submitted,

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